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MONTANA OUTDOORS

Our Point of View

JOHN R. FORD

Sustainability is a concept that most people can understand. Unlike the confused discussions about ecosystems, sustainability is intuitive. After all, it is about survival.

Just because it is easily understood does not mean sustainability is easily achieved. It has three dimensions—biological possibility, economic feasibility, and social acceptability—each can engender much debate.

As we move into fall, hunting is on the minds of many people. This year a thoughtful, and sometimes charged, discussion is taking place about mule deer. Clearly hunting of a species like mule deer can be a sustainable practice, biologically.

Sustainability does not imply stability. Mule deer populations fluctuate because of the relatively harsh environments they inhabit. Currently, mule deer numbers are down in some parts of the state. As a result, FWP and the Fish, Wildlife & Parks Commission have significantly reduced permits and over-the-counter license sales for antlerless mule deer.

The decline followed an extremely dry summer and a harsh winter that reduced fawn survival and made fawns more vulnerable to coyotes and mountain lions. The mule deer population will rebound.

A more complex issue is the low proportion of bucks in some hunting districts. While it may be biologically possible to sustain herds with low buck-to-doe ratios, it is not socially acceptable to some people. In these areas most of the bucks are only 1 or 2 years old, largely the result of heavy hunting pressure associated with accessible public lands.

This summer FWP biologists met with mule deer hunters across the state to determine what sacrifices, if any, they are willing to make to increase buck numbers. One option is closing the season earlier to protect bucks during the late-November rut when they are most vulnerable (see page 19).

Some hunters are not interested in a few more bucks, they want more large, mature bucks. This can most easily be achieved biologically by issuing permits through a drawing, significantly limiting the number of people who can hunt in a district.

We are now sorting out the other dimensions of sustainable mule deer hunting. Which publics do we serve, and where? Do we break the long-standing tradition of the Thanksgiving hunt, which many families with distant relations count on each year? Do we split seasons and create a dilemma for nonresident hunters who buy a big game combination license that includes both elk and deer? Do we protect a larger portion of the breeding bucks and allow them to mature?

Sustainability. It is more easily understood than achieved in today's world.

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DAVE BOOKS

Turn to page 23 for tips on hunting river-bottom roosters.

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Elk hunters wait around too much.

Oh, we swarm out there for the fanfare and ritual of hunting season's opening weekend. But then we hold back. We skulk behind windows and look expectantly to the mountains, waiting for weather—nasty, cold, snowy weather—to push elk out of the high country down to lower parks and ridges where it's easier for us to hunt them.

It's a silly habit, really, this waiting for elk.

We'd more fully appreciate the complex world of Montana's premier game animal if we'd hunt a herd of migratory elk from its first loose scatterings on alpine summer range right down to its final concentrated knot along open foothills where they winter.

If you were to hike up to the backbone of almost any high divide in Montana at the end of October, if you were to sit on the brink of almost any canyon's bowled

A M

TIM CHRISTIE

headwall, you would see elk, in the low evening light, casting elongated shadows into the grass on which they feed.

Sprawled among the hardscrabble rocks, you might watch the elk, and wait for your one-pot dinner to cook, and dig pieces of obsidian arrowheads out of the dirt—prehistoric litter past campers never bothered to pack out. Those guys also eyed the elk, no doubt, and peered off the cliffs with the same expectations you have.

It is a season of expectations for elk as well as for hunters.

For elk, the frantic urges of rut have passed. The first tight-fisted storms of fall have yet to pound the peaks. But there's an edge to the air that whispers of what is to become of the ice-laced grasses that cows and bulls nip off in clumps before morning sun spills into their meadowed amphitheaters at 9,000 feet.

assing of Elk

by Sam Curtis

BUD GRIFFITH

As days grow shorter and nights cooler, cows begin drifting with their calves toward lower elevation meadows and hillsides.

Some cows have already taken the hint and have drifted with their calves and a handful of young bulls down through miles of timbered ridges, over passes, and along steep canyon corridors to reach the border of timber above grassy foothills. So, on a typical opening day of rifle season, an elk herd may be strung out from 6,000 to 10,000 feet, if early fall storms have not yet hit.

But with the first crack of a rifle shot, on the third Sunday in October, those elk at lower elevations will ping-pong through the timber for only a day or two before they gather their wits enough to keep a low profile and spirit back up to higher ground.

In addition to avoiding hunters, their main preoccupation now is food. Cows stressed from the rigors of lactation and bulls haggard from a lusty rut consume between 10 and 15 pounds of forage each day in an attempt to thicken their body fat, which they'll depend on to get them through the long winter.

The state of elk forage at different elevations and on different aspects will influence where elk tend to congregate in the fall, and it is largely dependent on the precipitation and temperatures of the previous winter, spring, and summer.

A snowy winter combined with a cold spring, for example, can delay plant and shrub development in the spring so vegetation is still succulent and nutritious in open areas come fall. Consequently, elk may spend much more time than usual grazing in meadows and on open hillsides come fall. A mild, dry winter and spring, on the other hand, will probably have the opposite effect. A spring with below normal snowfall may cause plant growth to start two or three weeks earlier than normal. As a result, the elks' peak use of grasses and forbs on open grassland may come a month earlier than the previous year, and the elk may shift their feeding activities from grassland to forest habitats a month earlier.

"In droughty years," says Montana Fish, Wildlife & Parks elk researcher Terry Lonner, "elk are more concentrated in moist sites at drainage heads and along creeks and streams. The fall of 1988 is a good example. We'd had a terrible drought for almost three years, and we wound up with the fires in Yellowstone Park. That year was one of the highest elk harvests ever in Montana. A tough, snowy fall in the high country combined with the poor forage over most of their range brought all the elk down along the river drainages looking for something green to eat."

There, they met the elk hunters.

But dry summers don't always bring

elk down low. If the weather in the high country remains snow free, elk will find forage desiccated in alpine meadows and bowls, but they may still find good pickings on forested north slopes. Here, both the aspect and the tree cover help delay plant phenology until later in the season. In addition, these slopes hold moisture longer and nurture late season growth. Elk will gather on these high-country sites as long as Indian summer hangs on.

But eventually the wind picks up and blows hard for two days. The elk feel the dropping barometric pressure in their sensitive ears. Maybe on the third day the first curtain of snow undulates across the timberline meadows, and the temperature plummets like a thrown rock.

Primeval migratory stirrings push the elk to search for thicker timber. Cows and calves in scattered groups step downhill; bulls turn their faces away from the wind as snow covers their backs like blankets.

The slow squeeze of hunger, cold, and snow has begun. You can watch the massing start. You can see the elk cluster in small groups and drift, skirt past open parks, and pick through timber, descending terrain the herd has known for generations.

Migration is a response to dwindling or inaccessible food supplies; it's a way of moderating the weather. And the mechanism that triggers the response is as much the cold as it is the snow. But migration is rarely a tidy movement of a whole herd, in one neat swoop, from spacious summer quarters to cramped wintering grounds.

Even the big snows and the deep freezes may not have lasting effects in keeping elk pointed downhill. They may set off toward their traditional winter range only to turn around and head back to higher elevations when weather turns nice and the snow begins to melt. This yo-yo routine may go on three or four times during the hunting season depending on the downward push of weather from above and the upward thrust of hunting pressure from below.

Ironically, it's the most sought after bulls that are the least influenced by the snow. While cows and calves may go on the move when faced with pushing against 18 inches of snow, bulls often choose to cope. They may simply switch from grazing on low herbaceous forage under the snow to browsing on taller shrubs above the snow. Sometimes they avoid heavy snow depths by changing their focus of activity, by moving under thicker forest canopies where little snow reaches the ground or by searching out south-facing slopes or windswept ridges where snow is either melted or blown away. These maneuvers often enable lone bulls or small groups to remain in the high country for weeks after cows have headed down with their calves.

So, it's left to the cows to pass on to their calves the imprinted memory of the herd's tradition. By following historic routes of travel from the same summer range to the same winter range and back again, year after year, often amidst strong hunting pressure, the herd gains a collective memory of its past that it continues to follow into its future.

If you were to follow a cluster of elk as the prongs of harsh weather prod it from its mountainous summer range, you would see that quirks of topography and of forest cover help define the patterns of their historic travel lanes. Where possible, the elk conceal their movements by descending under a canopy of trees. Their route often follows canyon bottoms where established stream crossings show clearly in the broken, trampled banks. Ridges, too, provide natural avenues for migration, although elk usually avoid their high-profile backbones and follow, instead, trails they've established just below their ridge lines. Saddles and passes make natural funnels where elk pour from one canyon to another, especially where there is good timber or topographic cover. Trails through particularly thick timber may be beaten into the earth three feet wide and a foot deep by the seasonal pounding of hooves over decades of use.

DUSAN SMETANA

In dry falls, elk tend to concentrate in moist drainage heads and along creeks and streams.

MICHAEL H. FRANCIS

Severe cold can arrive any time during fall, prompting massive movements of elk along ancient travel routes to winter range.

Follow the elk along these old established routes of migration and you will discover a social interplay: the lead cows and their calves, the young bulls and the dry cows, the old, aloof bulls, all falling into place in a hierarchy of sex and age on the move at varying elevations at different times.

Cows with calves tend to spearhead the move downward, and they may ultimately end up on the lowest elevations of their winter range. Next come the yearling bulls and the cows without calves. They are slower to move and may end at slightly higher elevations. Mature bulls are last to leave the high country and will stay higher and in more rugged terrain than any other sex or age group in the herd. It's an arrangement that seems to favor the survival of the young, to ensure the perpetuation of the species, whether by happenstance or design.

Once begun, the pace of migration is geared to the pulse of the weather. A gradual, steady increase in snow depths and a corresponding decrease in temperatures from the end of October through November makes for a slow movement of elk out of the high country and a gradual massing of their numbers closer and closer to winter range.

An individual elk under such conditions might take a full month or more to meander 10 miles and descend 4,000 feet in elevation from summer to winter range. To a mathematician, that might mean an elk moves an average of a third of a mile and descends in elevation an average of 133 feet each day for 30 days to complete its migration. But elk don't hang out with mathematicians. They hoof it two miles today and none tomorrow, depending on the urgings of the weather, and still reach the same end the math man has penciled out in 30 equal increments.

When they do move, elk favor certain times of day. A nine-year study conducted with radio-collared elk concluded that, in a 24-hour period in summer and early fall, elk were most active between 4 a.m. and 8 a.m. and least active between 8 a.m. and 4 p.m. But their second most active time was between 10 p.m. and 4 a.m., and the elk went on the move whether or not the moon was shining to light their way.

The study suggests several things. First, elk are probably smart enough to know that there is no hunting activity at night, no matter what the phase of the moon. So it's the safest time to be out and about. Second, elk are more adept at seeing in darkness than we are. Their eyes can pick up more light than ours can. Therefore, those nights that seem as dark as the inside of a black bear to us still provide enough light for elk to put in some time eating on the move.

VINCE FISCHER

Mature bulls often remain longest in the high country, browsing on taller shrubs above the snow or searching out south slopes and windswept ridges.

Food continues to be important throughout migration, especially when the migration is leisurely. And to minimize their energy expenditure and maximize those important fat reserves, elk follow what biologists call "the law of least effort" while they migrate. For example, when traveling in snow, they walk where it is softest, avoiding wind slab and sun crust that would splay their hooves and make each step more difficult. And a group of elk moving through snow invariably walks in single file, beating down a path to make the going easier for those elk following along behind.

An elk's choice of bedding sites during migration may also reflect "the law of least effort." To minimize heat loss, and consequently the need for energy expenditure, elk often bed under forest cover which acts as a thermal blanket by slowing heat dissipation into the atmosphere. Dense ridgeside cover at the top of northern slopes is especially attractive for bedding because little energy is needed for an elk to step over the hill to the south side of the ridge when it's time for food and travel.

On the south side, during the day, elk can feed on grass exposed by melting snow; they can move more easily in lower snow depths, and they can take advantage of solar heat gain offered by the open southern aspect.

Elk prefer to feed in areas where forage density is greatest because it minimizes the amount of moving they have to do to fill their bellies. They also tend to feed in groups to minimize the time each individual must spend looking and scenting for danger and, therefore, to maximize their feeding time.

Employing "the law of least effort" when frightened, elk may make their initial getaway by plunging downhill on a route with few obstacles. These gravity-assisted fright flights let them get some quick distance on danger. In response to rifle shots, for example, elk radio-tracked by Montana biologists bolted, lickety-split, through timber for two miles in less than 12 minutes, proving that "least effort" is not necessarily little effort.

But "great effort" is what you'd call the migratory movements of elk in the face of the really severe winter weather that can wallop into the mountains at any time during the fall and at any stage of an elk's movement toward winter range. The massing of elk under extreme cold and snow can be a phenomenon similar to armies on the move.

Hunkering down in the teeth of a storm, elk seek refuge in the lee of ridges, in dense timber, even in snow wells formed by the low branches of big conifers. But when the blow and bluster is over, elk may move long distances in a short time to reach the security of their traditional winter ranges.

"There are some elk that summer in Yellowstone Park and winter on the Wall Creek Game Range along the Madison River," says Terry Lonner. "We've had radios lined up on the range after major snowstorms, especially in mid to late November, and the elk from Yellowstone have shown up there within a day or two, having traveled up to twenty miles."

And so, after migrating as few as two miles or as many as thirty miles, Montana elk reach the ultimate destination they've been pushed and pulled toward for perhaps as long as two months now. Here, the elk settle onto a range that may be one-tenth the size of their summer home. And, here, elk hunters may finally see the massed elk lolling under a high sun, right out in the open, just a day or two after the hunting season has closed. ■

Living in the

by John Vore

THE NORTHWEST WIND HAD A BITE to it as I stepped out of my pickup on Glacier National Park's Logan Pass. Ignoring the sleet pummeling the hood of my rain jacket, I began glassing the valley for bear, elk, sheep, or goat. Far away, through wind and snow, I heard a long, drawn out whistle. "Varied thrush" registered subconsciously, automatically. Wait a minute, what would a varied thrush be doing up here? Then it dawned on me: hoary marmot!

Since that cold June day I've learned a great deal about hoary marmots and spent a lot of time where they live. When I think of my favorite mountain haunts, a hundred images come to mind: forgotten lakes, rimmed by rosy granite peaks at sunset, alive with rising cutthroat; precocious alpine buttercups at the edge of a retreating snow field; bighorn rams high in an avalanche chute framed by stunted subalpine firs on a crisp September morning; a grizzly sow and cubs above timberline in a July snowstorm, overturned rocks careening down the mountain to thunder on talus below. Now I add to my mental treasury images that include hoary marmots.

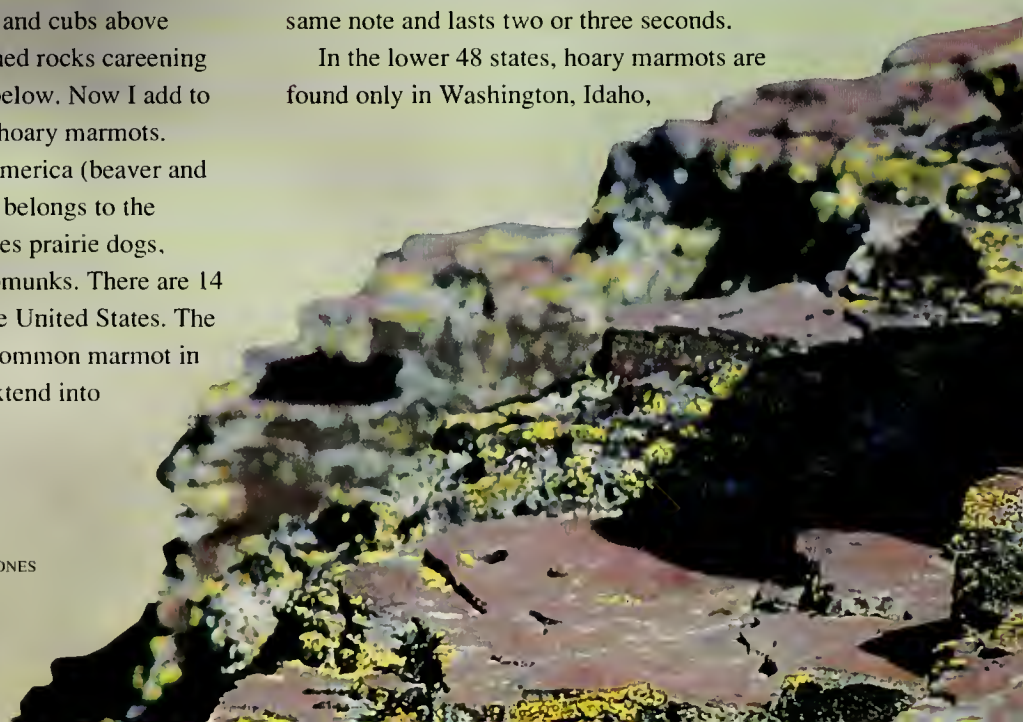
One of the largest rodents in North America (beaver and porcupine are larger), the hoary marmot belongs to the squirrel family, a family that also includes prairie dogs, ground squirrels, tree squirrels, and chipmunks. There are 14 species of marmots worldwide, six in the United States. The woodchuck, or groundhog, is the most common marmot in North America, but its range does not extend into Montana.

Watchable Wildlife

Montanans are likely to be more familiar with the more common yellow-bellied marmot, or rockchuck, than the hoary. It is found in the southern and western parts of the state wherever there are rocks in open country. The rimrocks around Billings are splendid yellowbelly habitat, as are lower elevation, open foothills of most mountain ranges. Although yellowbellies generally live at lower elevations than hoaries, they can be found at high elevations in places like the Beartooth Plateau. In a few mountain ranges (the Pintlars, for example), one can find both marmot species.

The two marmots differ in size, appearance, and voice. The yellowbelly is half to two-thirds the size of the hoary, and has a reddish-brown coat and white face mask (the hoary's coat is grizzled white). The yellowbelly's voice is a short, sharp chirp, the hoary's a long whistle that stays on the same note and lasts two or three seconds.

In the lower 48 states, hoary marmots are found only in Washington, Idaho,



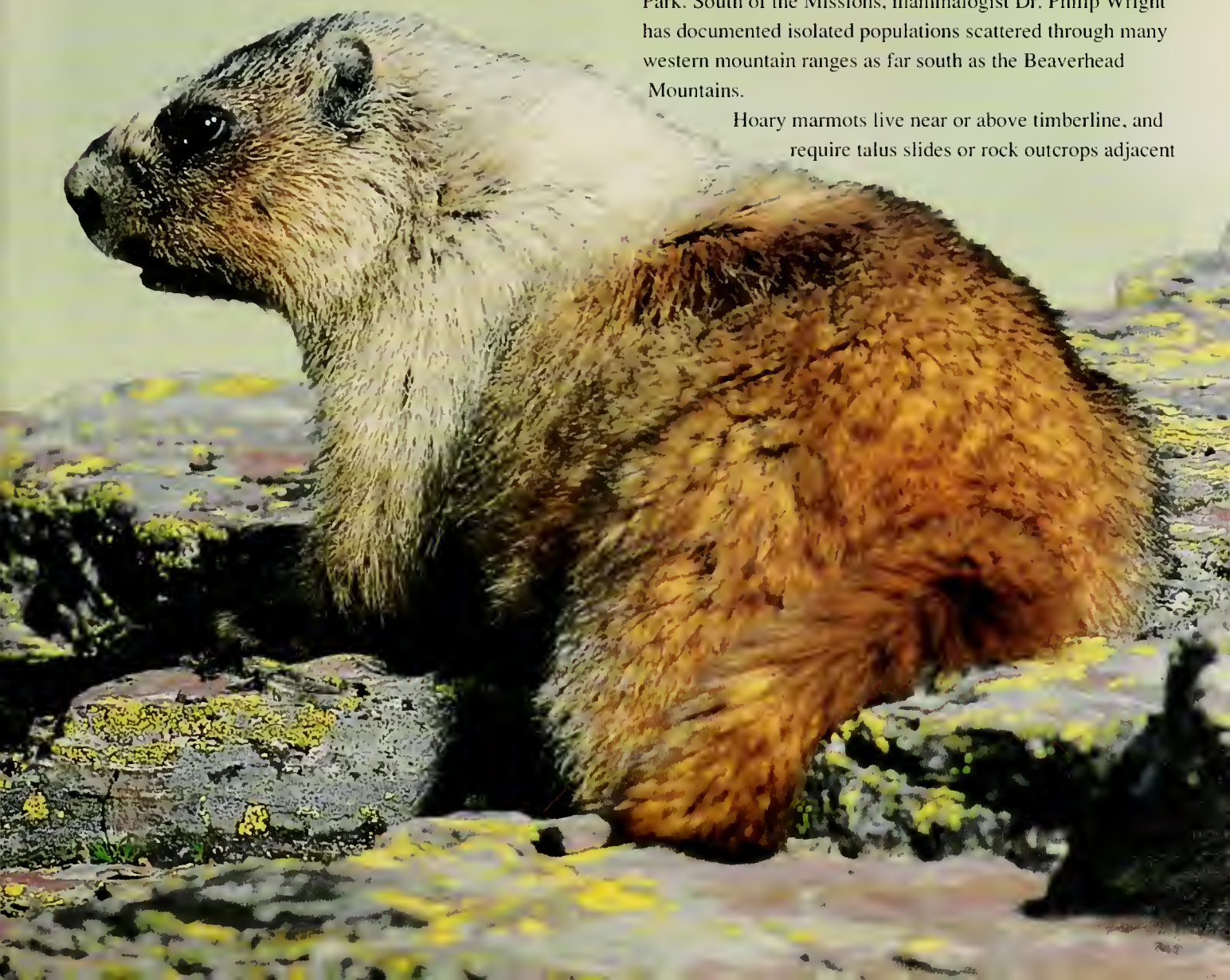
DONALD M. JONES

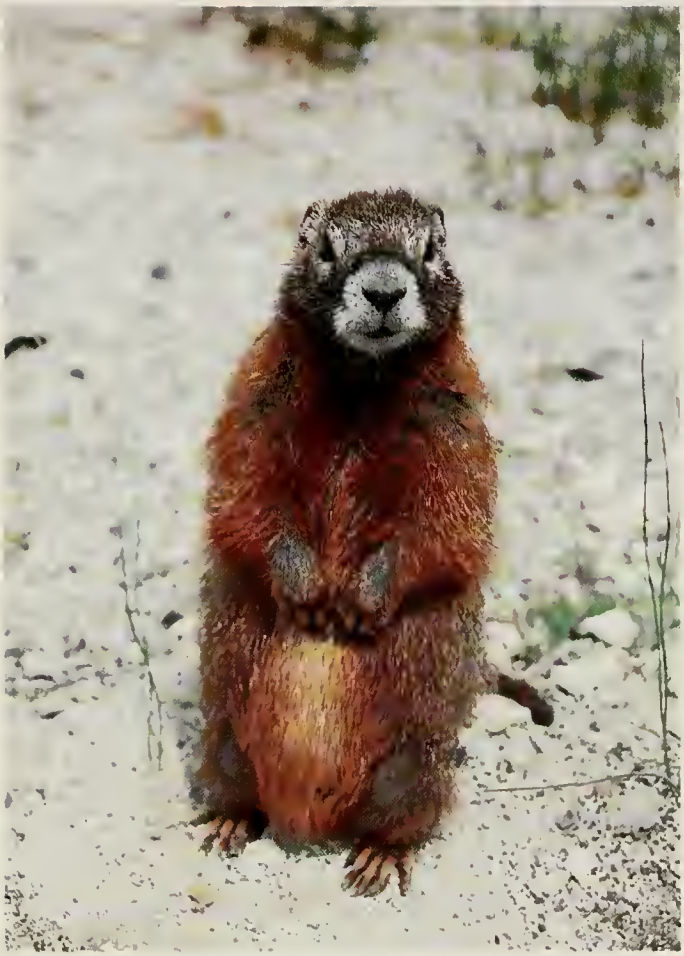
Crown

and Montana. In Montana, they live primarily west of the Continental Divide, although they are found east of the divide in a few places (such as the Bob Marshall Wilderness).

Highest densities are in the northwestern part of the state from the Canadian border south through the Mission Mountains. They are perhaps most easily found and seen in Glacier Park. South of the Missions, mammalogist Dr. Philip Wright has documented isolated populations scattered through many western mountain ranges as far south as the Beaverhead Mountains.

Hoary marmots live near or above timberline, and require talus slides or rock outcrops adjacent





MICHAEL H. FRANCIS

TOM J. ULURCH

Half to two-thirds the size of the hoary marmot, the yellow-bellied marmot (left), has a reddish-brown coat and white face mask. The hoary's black legs (right) give it the appearance of wearing boots (hence its scientific name, Marmota caligata, *meaning "booted marmot"). The yellowbelly lives over much of the state in rocky sites at lower elevations, while the hoary is found at high elevations primarily in western Montana.*

to mountain meadows. Running water, while not necessary, is a definite plus. Despite the open nature of their habitat, hoaries can be difficult to spot, partly because they blend in so well with their surroundings and partly because they tend to be shy (at least where they're not used to human visitors).

The hoary marmot has a stout, compact body and a fairly long, bushy tail. An adult may range from 24 to 32 inches in length, including the tail. Just before hibernation, when it is roly-poly fat, an adult male can weigh 15 to 20 pounds, a female 10 to 15.

All this tasty marmot flesh is enticing to predators. Golden eagles are probably the main threat, but grizzly bears, black bears, coyotes, mountain lions, bobcats, lynx, and wolverines also prey on them. Because they spend a lot of time in burrows and seek refuge among rocks, hoary marmots are tough to catch. Yet, as researchers Maurice Hornocker and Howard Hash discovered, hoaries aren't always safe underground: they had evidence of wolverines digging hibernating marmots from their burrows in mid-winter.

Marmots are true hibernators, spending more than two-thirds of their life asleep. After emerging from hibernation in May, they continue to use their fat reserves for a time because new forage is sparse and lingering snowbanks often cover much of the landscape. By green-up, a marmot may have lost 30% to 50% of its pre-hibernation weight.

When May beckons hoary marmots from their slumbers, it also awakens a very important urge—mating. The annual drama sees adult males leave their hibernating burrows one to three weeks before the females so they can set up and defend colony territories. Most hoary marmot colonies have only one adult male, often the same male from the previous year. He is most likely reestablishing his dominance and warding off eager adult males looking for a territory.

The size of the territory that he defends varies consider-

ably. The number of colony members and quality of the habitat play a role. Researcher David Barash found that one western Montana colony of 13 hoaries lived in an area of about 5.5 acres, or a little over four football fields.

Female hoaries become reproductively mature at age 3 and thereafter mate only every two, three, or even four years. This is an extremely low reproductive rate, more closely resembling grizzly bears than members of the rodent order. (One tends to think of all rodents as being like field mice, pumping out litter after wriggling litter.) Because of the huge energy demands of lactation, female hoary marmots are not able to put on enough fat during the short growing season to be in condition to breed the following spring, and maybe not the one following either.

Hoaries mate soon after the females emerge. Following a month-long gestation period, three to six young are born in the mother's burrow, each weighing less than an ounce. They are weaned in a month and come out to glimpse their mountain home for the first time in late July. There is already an urgent need to accumulate body fat before the short summer ends.

After weaning, the youngsters are inaugurated into the colony. This tight, cohesive unit is usually made up of 6 to 14 members. Most often it includes one adult male, two or three adult females, young of the year, yearlings, and 2-year-olds. Because there is typically more than one female that can have young, it's possible to have all ages of young and juveniles represented. During their first and second year, young marmots remain with their mother and hibernate with her during winter.

Young males leave the colony shortly after their second birthday. Young females may leave as well, but sometimes remain with the colony if an opening exists for an adult female. Young males seldom have that chance because adult

DONALD M. JONES

Hoary marmots, which live in talus slopes near alpine meadows, are frequently seen in Glacier National Park.

HARRY ENGELS

JOHN W. HERBST

CONRAD ROWE

During their first two years, young marmots remain with their mother and hibernate with her during winter (top photo). To avoid predators, marmots spend most of their time in burrows (above). They emerge primarily to greet other colony members, groom, defend territories, and forage.

males emerge from hibernation and set up territories before the rest of the colony comes out of hibernation. If the resident adult male dies during winter, his place is usually taken by another adult before the young males emerge.

During summer, colony life consists of socializing, eating, and avoiding predators. It is in part due to the latter that marmots spend most of their time in burrows. The burrow system consists of both home and auxiliary or "escape" burrows. Three colonies studied by David Barash in Washington had 10 to 20 burrow openings per acre. The burrows themselves are often between rocks in a boulder pile or talus field.

While escape burrows are generally shallow, home burrows can be extensive. Rocks often limit depth and length but they can be 10 feet deep and 12 feet long. Home burrows have numerous chambers: sleeping chambers lined with grasses, latrine chambers, nurseries, and hibernating chambers. Hoaries are tidy creatures and habitually clean parts of their burrows several times a week.

MIKE LOGAN

Bobcats (above) prey on hoary marmots, as do golden eagles, bears, coyotes, mountain lions, and wolverines.

Adult females and their young occupy single home burrows until the young of the year are weaned. After that they may favor a single burrow but will spend time in others. Adult males show the least fidelity to a single burrow. As summer progresses, colony members more frequently use other burrows. But regardless of season, during the morning "social" period every colony member usually visits every burrow in the colony, both occupied and unoccupied.

The amount of time spent each day out of the burrow varies over the course of the summer. During mating season, the males, in particular, are above ground a lot. In late summer, as forbs and grasses begin to dry out and nutritious forage is harder to come by, they spend less time above ground. David Barash found hoary marmots were below ground 60% of the time during midsummer days. As fall approaches and colony members begin lining hibernating chambers with grass in preparation for the winter sleep, they may be above ground less than an hour each day.

About mid-September, the entire colony begins hibernation in one or two burrows. Hibernation chambers are walled off from the remainder of the burrow with a plug of dirt, feces, and vegetation. This may serve both to keep things warmer and frustrate predators. Here the colony will sleep through the long Rocky Mountain winter. If the marmots have put on enough weight during summer, chances are good they'll make it till next May and start the cycle all over again.

The current status of hoary marmot populations in Montana is something of an unknown. In the 1950s and 1960s some good work was done to determine marmot distribution and status, but little has been done since. Populations are probably doing fine because most of their habitat is not threatened by subdivisions, mining, or other exclusive land uses.

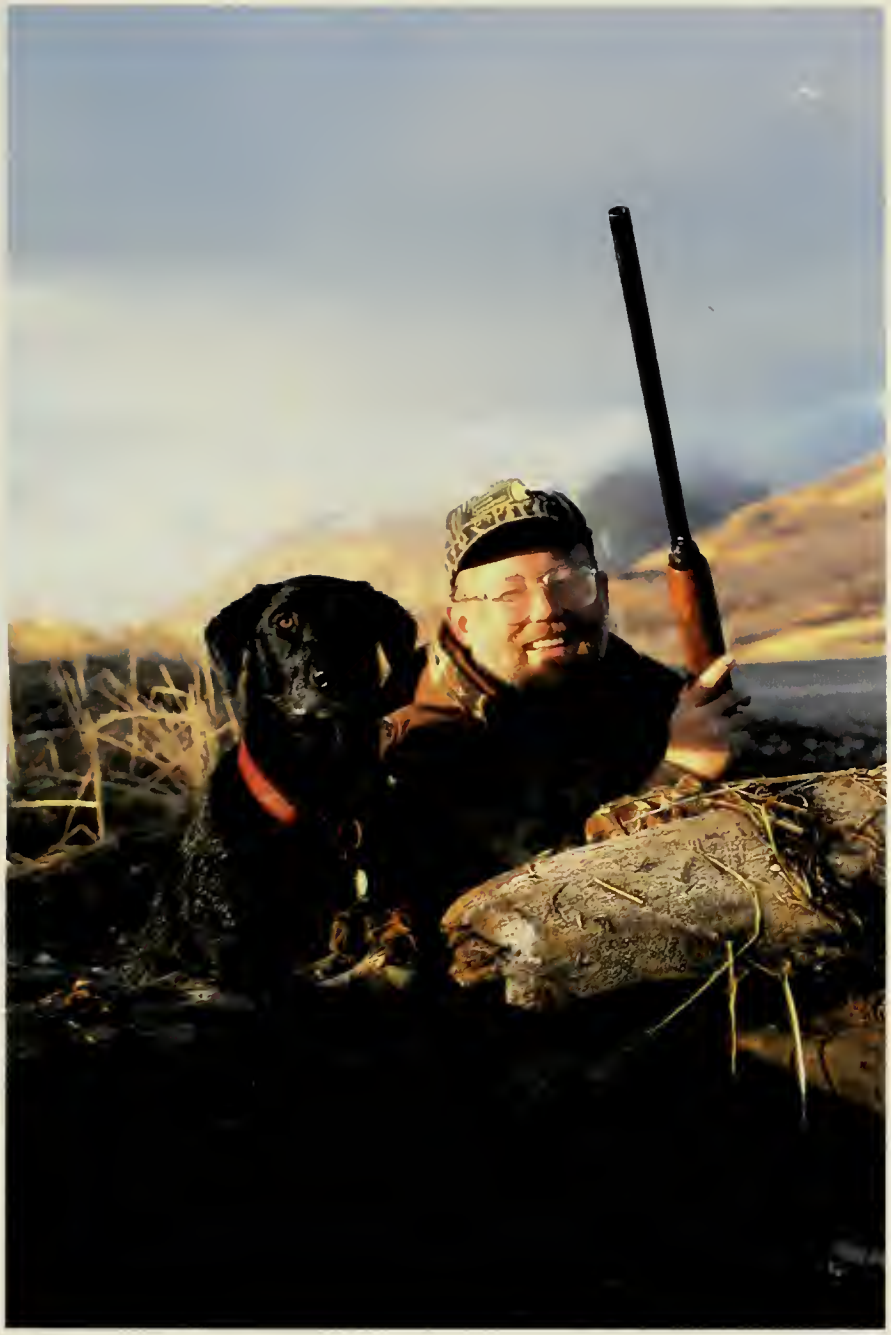
Over the years I have become an enthusiastic student of the hoary marmot, spending many enjoyable days and hiking many miles in marmot country. Learning how animals make their living adds immeasurably to the enjoyment of being where they live and watching them go about their business. Montanans are lucky to be able to share in the hoary marmot's life and visit its home—the crown of the continent. ■

Setting the Season

A new process called Adaptive Harvest Management promises to resolve long-standing conflicts over duck hunting regulations.

by Jeff Herbert and Fred Johnson

DAVE BOOKS



GARY KRAMER

For the past 10 years, the process of setting duck hunting regulations has been a lot like a family squabble—there is mutual respect and a common concern for the end result, but the arguments can get pretty heated at times. If you are a waterfowl hunter and concerned with seasons and limits—as most waterfowl hunters are—you may have followed this debate in Fish, Wildlife & Parks Commission meetings, magazine articles, or newspaper columns. Things got especially sticky in the late 1980s when declining duck populations led to shortened duck seasons, reduced bag limits, and special restrictions on hens of some species.

In 1992, a group of federal, state, and university waterfowl biologists

GARY KRAMER

Under Adaptive Harvest Management, regulations will give equal consideration to hunting opportunity and the status of mallard breeding populations relative to the goal of the North American Waterfowl Management Plan.

got together for the first of many "family" meetings. Their goal—a more objective, less contentious process for setting duck hunting regulations—led to development of a new system called Adaptive Harvest Management (AHM). Used for the first time last year, AHM streamlines and improves the annual process of setting duck hunting seasons.

How are Duck Hunting Regulations Set?

Waterfowl regulations are set each year through an ongoing cycle of information gathering, assessment, and decision-making. Data on habitat conditions, duck numbers, and production of young are collected through a combination of aerial and ground surveys on the breeding grounds, a sizable area of the northern United States and Canada that includes Montana. Annual duck harvest is determined through hunter mail surveys and duck band recovery information.

Once the data have been compiled and analyzed by waterfowl biologists from state and federal agencies and conservation organizations around the country, the U.S. Fish and Wildlife Service (USFWS) develops initial recommendations for duck hunting regulations. Input is then gathered from the flyway councils, states, and other sources. After further review, the USFWS announces final hunting season frameworks for the upcoming season. The states then decide on the specific seasons they want within those frameworks.

Building on Success

Despite the ongoing debate over hunting regulations, waterfowl management in North America has been remarkably successful. Duck and goose populations remain relatively healthy, millions of acres of habitat have been protected or enhanced, and waterfowl hunting continues to be an important tradition. Duck populations have fluctuated widely in the past few decades in response to changing environmental conditions, while most goose populations have steadily increased.

The Adaptive Harvest Management process builds on this success by addressing three areas at the heart of the season-setting debate: (1) disagreement over the objective to be achieved, (2) the large number of regulatory options, and (3) the extent to which hunting affects duck populations.

Agreeing on the Objective

Should the objective of waterfowl hunting regulations be to provide maximum hunting opportunity or to allow duck populations to grow at the

BILL MARCHEL

fastest rate? With AHM, biologists agree on the objective before each year's regulations are developed.

The harvest management objective for the upcoming season is linked to duck population goals identified in the North American Waterfowl Management Plan (NAWMP). This plan, an international partnership begun in 1986 to stem the downturn in duck populations, set a recovery goal for each species and initiated cooperative efforts across the continent to achieve them. The breeding population goal for the mallard, North America's most abundant duck, was set at 8.1 million because biologists felt that level would provide satisfactory hunting opportunity as well as meet ecological and nonconsumptive needs. As a point of reference, the 1995 mallard breeding population of 8.3 million birds exceeded the NAWMP goal and was the largest since 1972.

Under Adaptive Harvest Management, the objective to be achieved in the season-setting process depends on where the breeding mallard population stands in relation to the 8.1 million goal. When the population exceeds this goal, the objective will be to provide maximum hunting opportunity consistent with the long-term welfare of the species. Emphasis on hunting opportunity will decline if the population falls short of the goal. It is important to note that liberal regulations could still be appropriate in years when the breeding population is below the goal if habitat conditions are expected to produce a strong fall flight. The opposite could also be true.

Regulatory Options

The complexity of hunting regulations has increased dramatically over the last 20 years, greatly complicating decision-making and creating a somewhat confusing picture for hunters as well. Both hunters and managers would prefer simpler regulations. From a management standpoint, the large number of regulatory options (i.e., different combinations of season lengths and bag limits) has made it difficult to assess the effects of regulatory changes on waterfowl.

Last year—the first year under AHM—only three regulatory options were considered: restrictive, moderate, and liberal. Each option contained flyway-specific season lengths, bag limits, and framework dates (earliest opening, latest closing). As a point of interest, the liberal option had bag limits and season lengths similar to those in 1979-84, a time of relative waterfowl abundance. The moderate package reflected 1985-87 conditions, and the restrictive option, the dry period between 1988 and 1993.

Increasing Understanding and Reducing Uncertainty

To effectively manage the waterfowl resource it is important to know how various harvest levels affect population size. Currently, there is disagreement among experts on the degree to which hunting influences duck populations.

One theory holds that birds taken by hunters would have died anyway due to disease, predators, starvation, or other causes, and that harvest therefore has little impact on population size. This "compensatory" theory suggests that hunting regulations can be relatively liberal. In a competing theory, hunting mortality is added to natural mortality so that every bird taken by hunters represents a net reduction in the size of the population. This "additive" theory suggests that hunting regulations should be more conservative.

Over time, Adaptive Harvest Management will improve managers' understanding of the relationship between hunting and duck populations. This will be done through the use of competing waterfowl population models (incorporating the compensatory and additive theories) that predict how waterfowl numbers change in response to hunting and habitat conditions.

The computer models will not replace humans in the decision process. Instead they will allow waterfowl managers to use the tremendous amounts of data available on continental duck populations in ways that were not possible in the past. These models will be improved and refined over time, and continued monitoring of duck populations and harvest rates will be critical to the process.

When a family has a squabble, it requires communication and a cooperative attitude to work things out and move ahead. Waterfowl hunters, managers, and scientists have done just that in developing the AHM process. Although some fine-tuning is needed and a number of issues still need to be resolved, Adaptive Harvest Management addresses the issues that have caused conflict in the past and sets a firm course for the future. It represents a major milestone in the conservation of the North American waterfowl resource. ■

Good News for Waterfowl Hunters

DAVE BOOKS

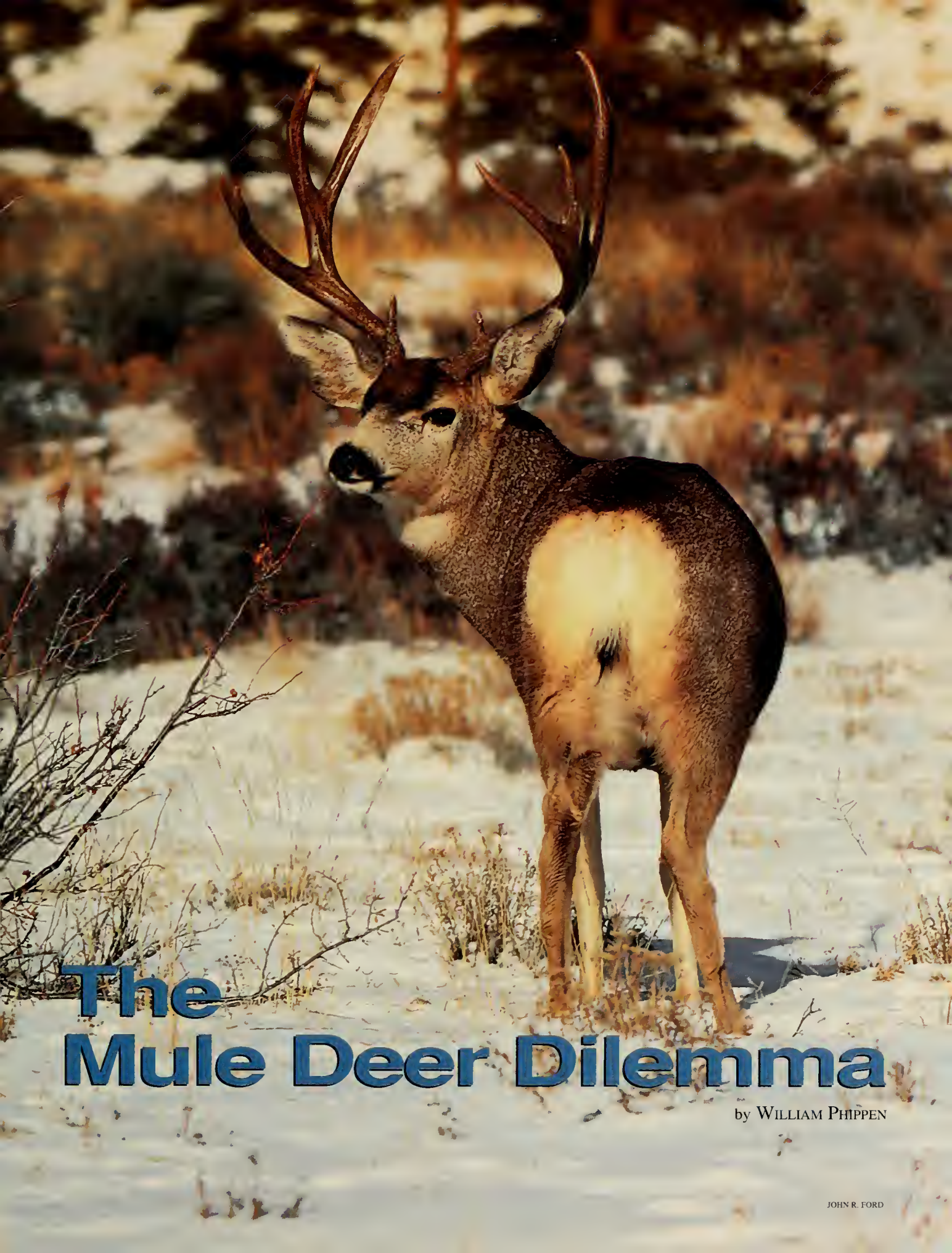
Surveys conducted by the U.S. Fish and Wildlife Service and the Canadian Wildlife Service across the prairie pothole and parkland regions this May documented another year of excellent conditions for breeding waterfowl. Duck breeding populations were estimated at 37.5 million, up 5% from 1995. Populations of four species—gadwall, blue-winged teal, northern shoveler, and canvasback—reached record highs. This translates into an above-average year for production of young birds and what promises to be a strong fall flight.

The overall number of ponds in the survey area rose 18% to 7.5 million, the second highest level ever recorded. The pond count in Canada rose 29%, with the biggest gains in southern Alberta and Saskatchewan. The U.S. pond count was similar to last year but still 84% above the long-term average.

The May survey flown across Montana east of the Continental Divide found an estimated 1.13 million breeding ducks and 209,000 ponds. Both estimates are above the 10-year and long-term average—in fact, the breeding duck count was the second highest on record. Conditions west of the divide were also excellent. Nearly all of the habitat enhancement projects developed cooperatively by FWP, USFWS, BLM, Ducks Unlimited, and private landowners were full of water and breeding waterfowl.

Success of the nesting effort is measured by how many broods are produced. The Montana production survey flown in early July showed duck brood numbers 50% above the long-term average. Production of Canada geese on the Montana breeding grounds also appeared to be good.

The overall increase in breeding duck populations occurred despite relatively liberal hunting regulations that, along with a large fall flight, resulted in a 46% increase in duck harvest nationwide in 1995. All indications point to another good year for Montana waterfowlers.



The Mule Deer Dilemma

by William Phippen

JOHN R. FORD

It isn't news to numbers of Montana hunters that mule deer populations in some areas of the state have declined. And in certain parts of Montana, buck/doe ratios are low and the number of mature bucks has decreased.

Steps already have been taken to bolster overall mule deer numbers through a reduction in the antlerless mule deer harvest. For the 1996 season, the sale of over-the-counter antlerless mule deer "B" licenses, which totaled nearly 26,000 in 1995, has been eliminated, as has the hunting of either-sex mule deer or antlerless mule deer in specific regions. In addition, the number of "B" licenses available through the drawings has been significantly reduced in areas where population declines have been noted.

What to do about the buck situation is another matter. That question, and others related to it, were the center of discussions at a series of deer "summits" sponsored by Montana Fish, Wildlife & Parks (FWP) as a part of the 1997 season-setting process.

Last fall, while in the process of setting big game hunting regulations for 1997, the Fish, Wildlife & Parks Commission delayed taking any action on 1997 deer seasons until objectives for future management of deer in the state had been completed. Draft objectives, completed last spring, reflect the current status of both white-tailed and mule deer in Montana and the preferences of hunters toward the management of those species.

At the deer summits held this summer in Bozeman, Libby, Kalispell, Missoula, Butte, Great Falls, Billings, Miles City, Malta, and Glasgow, FWP officials:

- Discussed the status of deer populations in the state.
- Related what they have learned about mule deer population fluctuations and the factors that affect mule deer numbers.
- Explained the results of a deer hunter preference survey conducted in 1995, the findings from a recently completed analysis of the agency's past deer management, and the implications of both reports for future deer management in Montana.
- Discussed the deer management

objectives that have been developed for different areas of the state, the various types of regulations and seasons that might be used to achieve those objectives, and the trade-offs for hunters associated with each regulation.

In return, hunters were asked to share their observations about the current condition of the state's deer herds and to comment on draft management objectives and alternative hunting season types for mule deer that could be used to achieve the objectives.

As Montana's wildlife managers, FWP officials and the FWP Commission—the entity ultimately responsible for setting seasons—face a dilemma. Some hunters have insisted that fairly drastic measures need to be taken, including shortening the season for mule deer and ending hunting before the onset of the rut late in November. Others have suggested that the benefits to hunters of a five-week season preclude shortening the season and that the time-honored tradition of hunting with family over the Thanksgiving holiday must be maintained.

If increasing the number of bucks in some areas and improving the numbers of bucks of differing ages in the population are to occur, some changes in season types must be made to allocate or control the buck harvest. A potential problem, however, is that if restrictions are implemented in some areas, hunters may simply move to other areas, perhaps causing undesirable impacts there.

Management options for areas where current mule deer management efforts aren't producing the desired results include:

- Restricting hunters to one season (archery or general).
- Restricting hunters to one deer species (mule or white-tailed).
- Restricting hunters to one area (region or hunting district).
- Shifting the entire season to an earlier time period.
- Shortening the season (ending it earlier, before the rut).
- Instituting permit-only hunting.
- Placing size restrictions on buck harvest (for example, four-point or larger).

Each of these options has pros and cons for both deer hunters and other

BILL MCRAE

What Do Hunters Think?

In a recent survey of resident and nonresident deer hunters, FWP learned the following:

- Among residents, the strongest influence affecting where hunters chose to hunt was access. Public land was preferred over private land, and hunters selected against areas where fees were charged.
- Distance from home was the second most important criterion for residents. If the opportunity to hunt was much farther than 150 miles, hunters tended not to go.
- Crowding had the least influence on where residents chose to hunt.
- Although resident hunters generally chose not to hunt in areas with little or no chance for a big buck, they did not want to give up much hunting opportunity for a chance at taking a trophy.
- Among nonresident hunters, crowding was a critical factor in where they chose to hunt (they preferred not to hunt in crowded areas); ease of access was less important.
- Nonresidents tended to favor more stringent regulations, such as four-point-or-larger and permit-only areas for bucks.
- Among all respondents, the primary reason for hunting was to enjoy nature and the outdoors. Following closely behind was obtaining venison for eating.
- Hunters did not agree on the best management option for increasing the opportunity to take a big buck in an area.

segments of the public who benefit from Montana's mule deer. Several factors to be considered include:

(1) In areas where they have been implemented, **shorter seasons** have not appreciably increased buck survival because they tend to concentrate hunting pressure and hunters become more effective within the shorter time frame. Related to this is the problem of shifting the harvest from areas where the season has closed early to areas in which the season remains open. For this option to work, restrictions on movement of hunters from one area to another may be needed.

(2) **Earlier seasons** conducted prior to the rut may result in better buck survival in mountainous areas because bucks are more vulnerable during the rut and because late fall migration tends to increase the vulnerability of bucks to hunting. Wyoming and Idaho have had some success in increasing buck survival by allowing hunting only during October. Again, restrictions to control hunter shift might be necessary unless earlier seasons are implemented statewide.

(3) Limited, **permit-only** seasons for bucks are the most effective way of increasing buck survival. Limiting the number of hunters increases the number of bucks surviving the hunting season and improves the age structure of bucks in the population. Problems include the restrictive nature of permit-only seasons and the tendency of hunters who do not obtain permits to shift to adjacent areas.

(4) **Point-restriction** seasons, (e.g., four-point only), focus all the hunting pressure on larger bucks. While total buck numbers are increased, few older age ("trophy") bucks are produced by these types of seasons, except in areas where access is limited or where good security cover provides protection. In addition, illegal harvest of smaller bucks tends to be a problem.

Another option is to continue managing mule deer as they have been managed in the past. Hunters would experience peaks and valleys in the buck harvest related to the overall number of deer in given areas. Efforts would continue to improve habitat and, in particular, security cover, to increase buck survival.

According to Don Childress, administrator of FWP's Wildlife Division, the goal of the summits and the extended public involvement process requested by the FWP Commission is to share information and to involve Montana deer hunters in selecting the specific management objectives and types of hunting seasons that will ensure the long-term health of the state's deer populations and provide satisfactory hunting experiences. Public hearings on the tentative 1997 deer hunting regulations are currently underway, and adoption of final regulations by the FWP Commission will take place in October. ■

BILL MCRAE

Increasing the number of larger mule deer bucks in some areas will require changes in season type or length.

Montana's River Roosters

by Dave Carty

GREG OERSBACH

DENVER BRYAN

There's a certain island in the Missouri River, a hellish place, grown over with wild rose and cottonwoods. Beavers have chewed through the willows rimming its banks, leaving behind stubs like so many hidden punji sticks. The only reason I visit is the pheasants. They stream in from the wheatfields on the hillsides above the river, secure in the knowledge that anyone who ventures in won't come back again soon.

I SPENT YEARS WADING THROUGH CATTAILS BEFORE I FINALLY LEARNED MY LESSON: PHEASANTS DON'T LIVE IN THE MIDDLE OF THEM; THEY LIVE ON THE EDGE ALONG THE BORDER OF THE CATTAILS AND SOME OTHER TYPE OF COVER.

They're right. I have and I won't. But once, long ago, before I swore off that island, I shot a bird there. I'll tell you how it happened.

My partner Eric Wiltse and I, for a lack of any better way to abuse ourselves that afternoon, decided to hunt the place with his setter, Georgia, and my springer, Poke. Poke, who died a few years ago, was in his prime in those days, and although he was hardheaded at times, he had an intensity in the field that made him worth the trouble he caused. The two of us donned hip boots and waded to the island at its downstream end. The dogs charged into the underbrush and disappeared, followed shortly afterwards by Eric, whom I could hear forging ahead inland. I waded up the side of the island, trying to stay parallel to the action.

Five minutes into the fray a hen flushed, followed soon after by another. Ten minutes later, as I waded quietly around a bend, Poke crashed to the bank, stuck his head out, and, seeing me, dove back into the brush. A few seconds later I spied a flash of copper and then a rooster, which shot into the air and flew directly upstream. It was an easy shot, one of the few I haven't missed.

The nice thing about hunting river-bottom jungles is that you usually know where the birds are, an advantage that isn't always possible in the miles of CRP and row crops of the Midwest. Why do pheasants crave this stuff? I'm not quite sure, although they certainly love the protection such cover affords. Thank God, not all river bottoms are as overgrown as that Missouri River island. Still, the birds do seem to like it thick, and the thicker the better.

DENVER BRYAN

They also seem to like the food river bottoms provide. Although I generally find more birds near wheatfields, pheasants can survive without cultivated grains. I once spent an afternoon hunting near Fort Benton in a spot I'm sure was miles from the nearest stubble field, yet there were birds all over the place. Later, when I opened up the crop of one of the roosters I'd shot, I found it stuffed with weed seeds and rose hips. In other areas, I've found pheasants keying into snowberries, a food supply indigenous to nearly every corner of the state. Pheasants love the little white berries these knee-high bushes produce, as do nearly all other gamebirds.

And, of course, there are the cattails. Cattails, I've found, nearly always have birds nearby, assuming there are any at all in the area. But hunting patches of these reeds isn't always pleasant. Early in the season, before the ground freezes, wading through the muck they grow in can be close to impossible, and probably more trouble than it's worth. I spent years wading through cattails before I finally learned my lesson: pheasants don't live in the middle of them; they live on the edge, along the border of the cattails and some other type of cover.

It doesn't take a big patch to attract roosters. Once, as I was hunting near a spring creek that flows into the Jefferson River, I discovered several clumps of cattails, the largest of which was probably no more than 20 yards across. The first few patches my springer worked yielded nothing. But the third gave up a surprise: a bird whose path I could trace through the reeds as it tried to sneak away from me. I motioned for the buddy I was hunting

with to post himself nearby, then called Poke over and sent him in downwind of the bird's trail. The little spaniel caught scent immediately, paused, and sprang into the grass. Even dogs miscalculate, however, and his first pounce produced nothing. He paused and jumped again, then again. Finally, the bird clattered into the air not more than five feet from me. I dropped it to the cheers of my friend.

WHEN YOU HUNT can be just as important as where. Obviously, opening day is prime time to be afield, a fact that is no secret to the thousands of other people who will be out there with you. Still, it's probably worth going out; it may be the only time that the birds seem at a loss for tactics. After opening day, tactic-free birds are a fantasy.

When possible, I hunt during the week, avoiding the weekend crush. Even on public hunting areas, the hunting can be surprisingly good when the birds settle down a bit. Eric and I once spent several days hunting Freezout Lake Wildlife Management Area (WMA), which is technically not river-bottom habitat. But since most of uplands surrounding that beautiful place also border water, the cover is similar, although Freezout lacks the cottonwoods most of the rivers in the state support. In any event, Freezout gets hit and hit hard. Yet the two of us found roosters nearly every day, and one memorable afternoon flushed six or eight at once from a draw on the WMA's south side. The wind was howling that afternoon (I thought it would blow our tent away that night), and every bird we flushed shot downwind as if fired from a cannon. We killed just one of them, but the memory of that cluster of roosters hightailing it away from us is etched in my brain.

The relatively narrow swaths of cover along Montana's river and stream bottoms can be used to the hunter's advantage. Pheasants *usually* won't run across open prairie or wheat stubble (although I wouldn't bet against their doing that), making a modified drive an effective technique. Since I've never been comfortable hunting with more than two or three other people, I rarely take part in the big drives popular in some parts of the country. And, at least in western Montana where I hunt, they're really not necessary. A couple of standers and a lone driver will work fine on most stream bottoms, assuming the driver has a good dog—a loaded topic if ever there was one.

"Good" is an adjective fraught with emotion among dog owners. What makes a dog good? What breed is best?

DAVE CARTY

Because roosters often fly over water when flushed, staying near a stream or river bank is often a good bet.

How far should your dog range? Most of the once-a-month pheasant hunters I know own Labs. But most of the *hard core* pheasant hunters I know own either pointers (German shorthairs, Brittanies, or setters, in about that order), or springer spaniels. Although there are some extremely good springer spaniels in this state (particularly in the Gallatin Valley, where I live), I get the impression that they're not as popular elsewhere. I own two pointers, a setter and a Brittany. The Brittany is developing into a fine little pheasant dog, and has been an excellent Hun dog for years. The verdict is still out on my setter. The point is, I wouldn't even consider going out without at least one of them. Pheasants don't always run away from hunters; when they elect to hold they hold like burrs.

Waders are another important piece of equipment. Sooner or later, you'll have to wade an irrigation ditch or slough. Hip boots are generally preferable to chest waders, particularly early in the season, when the weather is often warm. I buy the cheap all-rubber jobs, primarily because they're (1) cheap, and (2) easy to patch. Holes are a foregone conclusion, for if the briars and beaver-chewed punji sticks don't get you, the barbed-wire fences will.

If there's a chink in a rooster's armor, it's his proclivity to fly over water when flushed. Why they do so is beyond me, but it's true—I'll bet 90% of the birds I flush fly directly over the river or stream near which I'm hunting them. Therefore, I always try, when possible, to stay near the streambank if I'm hunting by myself, or post someone else there if I'm hunting with a friend. This technique doesn't work all the time (*nothing* works all the time), but it works often enough to make it worth a try.

Despite their reputation, pheasants won't run forever. Although I've never been able to predict exactly when they'll flush, I do know that, as often as not, the birds will hold when they reach some type of break in the cover. The most reliable break, of course, is an open field—wheat stubble, pasture land, sparse sagebrush. But they'll also hold when the cover changes from moderate to heavy, as when, for instance, they've been pushed from grass into a patch of cattails, or from grass into a swath of rose hips.

DAVE BOOKS

Brittanies are good pheasant dogs, as are many other pointing and retrieving breeds.

Staying with a dog hot on the trail of a rooster can be frustrating. I once chased my springer nearly a quarter of a mile at as good a clip as I could muster before the bird flushed and foolishly doubled back over my head. I managed to wing-tip it, and when it fluttered into the cattails a hundred yards away, I gave it up as lost. I sent my plucky little springer after him, however, and after 10 long minutes I spied the dog on the far bank, the still-kicking rooster in his mouth.

I trained my springer, and later my pointers, to sit or whoa on command, and at one point used to stop them when they got too far ahead on a hot track. But I've stopped doing that, and have had more shots as a result. Whoaing a dog on a hot trail can, and often does, give the bird a chance to escape. Pheasants can simply vanish, as anyone who has ever hunted them will tell you.

Should you manage to stay with your dog, however, pay attention when he stops and begins working frantically through one area, casting back and forth for scent. Pointers are likely to freeze and then creep at this juncture, particularly if the bird is still moving somewhere ahead of them. Springers and Labs, on the other hand, may reach a frenzied pitch of activity, and begin pouncing on clumps of grass or other bits of cover. Be stalwart, brave friend, for the quarry is at hand.

Although pheasants that are hunted hard usually migrate to the thickest cover around, that isn't always the case. A couple of years ago, hunting a stream bottom on a ranch near Lewistown, I made a swing through the willows along its banks. We saw nothing in several hours of hunting. Frustrated, we decided to hit the wide-open acres of snowberries and grass bordering the willows, and to our surprise managed to put up several roosters. This wasn't remarkable hunting, by any means, but it wasn't bad, either, considering the pressure that stream bottom gets.

I've even spoken with one man who finds birds in the sagebrush foothills—Hungarian partridge country—surrounding that same ranch. He claims the birds run up there to hide. Evidently he knows what he's talking about, and he often has the roosters aging in his garage to prove it. What's more, the last time I was at his place for dinner, I noticed his foothill roosters were just as tasty as the other kind. Funny how that works. ■

MIKE GURNETT

Goose Camp

by GREG TOLLEFSON

By opening weekend of waterfowl season western Montana is in full autumn regalia. Up in the Swan Valley, the "summer people" have stored their boats, boarded up their cabins, and slipped away for another year. Quiet has settled in. The tamaracks have turned and the Swan and Mission ranges are swathed in warm golds and reds. Cottonwood, aspen, and birch on the valley floor have deposited a calf-deep carpet of leaves. The glassy surface of Swan Lake reflects those mountains in an image that is nearly as clear, detailed, and perfect as the real thing. The crisp fall air is punctuated by the smell of wood smoke drifting lazily along the shoreline.

It is 25 years now since we first began to gather at the old cabin on Swan Lake to usher in the waterfowl season. We have been doing it ever since. We call it Goose Camp.

A similar ritual is repeated all over this part of the country on the same weekend every year. Old friends gather to spend a morning or two hunkered in damp, chilly blinds while first light creeps across the marshes, waiting for ducks and geese to come tumbling out of the sky into range of their shotguns.

That's how Goose Camp started.

Right up front, we would all admit that none of us has ever viewed the Swan as some kind of a mecca for duck and goose hunting. It is not a place you go to satisfy waterfowl blood lust. Our experience over 25 years has done nothing to alter that. The circumstances surrounding the taking of each of the 23 geese that have been downed in that period are recounted in detail around the kitchen table each year, usually accompanied by a sense of wonder that any birds had been taken at all. In other places, that many geese might fall to a group this size in a single morning. The ducks haven't fared much worse. We started going to the Swan because the cabin up there gave us a place to go, and we just kept going, that's all.

Our disheveled crew, complete with the long hair, beards and maybe a few left-over beads of the time, some fresh from military duty, some fresh from avoiding it, would arrive in battered pickups and $50 cars on those now distant, early fall afternoons. One by one, the vehicles would slowly pull down the long, shaded drive into the sunny opening behind the cabin.

Erwin, who lived the closest then, and still does, usually arrived first, turned the power on and got the pump running. Then, like the doorman at a fine hotel, he stood there in waders and camo, with hands on hips and a cigar clenched in his teeth, to greet each incoming vehicle.

Gabby and Gimpy always arrived together, issuing from their car with a stack of equipment and a case of Gabby's home-made beer. Homer, Dave, Cecil, and Johnny caravaned in from east of the divide in a couple of trucks festooned with assorted boats and canoes, dog kennels, and decoys. Val and Russ would come in from the West Coast, arriving by various means, sometimes leaving us guessing until the last minute as to whether they were going to show up at all.

A whole pack of dogs, Chesapeakes, goldens, and Labs, would emerge from those pickups, snarling and yapping, looking for new faces and reestablishing the pecking order from the year before. By the time we had moved a mountain of equipment and food from the vehicles to the cabin, the chain of command in the dog world would have been solidly established, and those who couldn't seem to get along would have been exiled to their kennels.

Sure, early on we took the hunting seriously. That is what brought us there, after all.

In those days, we always got there in time to make our way across the lake to our special spot so we could construct elaborate blinds and arrange large numbers of second-hand decoys according to the latest theories espoused in outdoor magazines.

Erwin was in charge of the layout of the decoy spreads, because he was the one who kept up on the cutting edge of spread design theory. Gabby and I paddled hither and thither in the canoe while Erwin barked orders at us from the shore. Sometimes he would change his mind about a particular decoy and we would have to haul it in and move it a few feet left or right.

"Would you just decide where you want this thing?" Gabby would plead.

"Don't rush me now. We want to do this right," Erwin would respond placidly.

Late that evening, in the kitchen clouded blue with the smoke of cheap cigars, after a dinner designed to hurry each of us down the path to heart disease, we would draw straws to see who would get the choice blinds and who

would be stuck with others. There was no shortage of bickering about the injustice of Homer and Erwin always seeming to get the best spots, while some of us were nearly always relegated to the less productive blinds.

Come opening morning we clutched our hand-me-down shotguns and shivered in our leaky waders as we waited for first light. We tried to quiet our whimpering dogs while we strained to hear whether there were geese or ducks on the water before us. If there were some birds out there, we held our fire when legal shooting time came, hoping that live birds would bring in even more.

Well, sometimes we held our fire. There are some famous exceptions to that rule, most of which involve one of our crew getting itchy at just the wrong moment. It could be boiled down to the image of someone taking a poke at a lonely, circling teal, just as a flock of a hundred greenheads or a couple of dozen honkers were making their final adjustments for a descent into our decoys.

Things have changed. Now there are fancy trucks in the driveway, and planes to be met from San Francisco and Seattle. The shotguns that are carefully removed from the padded cases are the ones we once read about in the magazines some of our group now write for. And nobody rushes to get to the blinds.

Instead, the arrival on Friday afternoon has become something of a ceremony. Where we once spent most of our free time rambling around the mountains and rivers together, now many of us meet only this weekend each year. There is much hugging, backslapping and heavy handed commentary about the ravages time has wrought on each of us. The slightest expansion of girth, graying at the temples, or thinning on top is exhaustively noted.

As evening comes on, we move to the tiny kitchen of the cabin where we crowd around the table and gorge on elk or grouse and Erwin's huckleberry pie, the banter and laughter never stopping.

The stories go on and on, getting more intricate, more heroic, or sometimes more hilarious with each retelling.

There is always the one where Johnny throws a dead mallard out for his aging and feeble retriever, Dax, to bring back. As old Dax struggles to swim out to the bird, it comes to life and flies away. This was the official beginning of "shoot and release duck hunting."

Or there is the detailed explanation of the complicated chain of events involving Gabby and Gimpy on opposite sides of the Swan River near where it flows into Swan Lake. We find them trying to transfer Gabby's hunting license across the river to its rightful owner. The license ends up in 10 feet of water, attached to a couple of shotgun shells, so Gabby has to go swimming. The duck hunters who round the bend in their boat are somewhat surprised to find a naked man standing on the bank of the Swan in the October mist.

"Is something wrong? Can we help you, sir?" one of them shouts from the boat.

"No. Everything's okay. Thanks," Gabby waves them off.

So those hunters went on around the bend, but obviously they remained concerned about what they had seen, because in a few minutes they returned to find Gabby, still naked, emerging from the frigid water with his license.

The great "two-goose retrieve" of the legendary black Lab Bullet is always worth a mention. And with the name of Bullet, we launch into stories of the other dogs that have shared Goose Camp with us over the years, and are now gone. There was Woolsey, named for the Cardinal, and Dax, short for Darius of Persian fame, and Gus and Spud and Buster and Goose and Betts and Hoot and Maggie and a few that I know I am missing here. As the names and exploits are recounted, we all get a little misty-eyed.

The stories go on until after dinner when Gabby produces a list of obscure words encountered in a year's worth of reading and we match wits, trying to come up

DAVE BOOKS

The skies over Goose Camp are often lonesome, but Maggie's patience is rewarded with a wigeon.

DAVE BOOKS

A Goose Camper waits for the sun to sneak over the Swan Range and burn the mist off the water.

with plausible definitions. Each year, someone surprises the rest by actually knowing the meaning of a word like "verdigris."

Later on comes some poker, maybe a glass of whiskey for those who haven't taken the pledge yet. It isn't that anyone needs the whiskey to warm things up. Just being together does that.

In days gone by, we might have stayed up until the wee hours, drinking, laughing, arguing. Then, a few short hours later we would slog dull-witted through the dark to our blinds. Not anymore. It might just be middle age, or maybe too many nights up with crying babies. It's hard to tell why exactly, but we all turn in at what our parents used to call a "decent hour."

Then, sometime around daylight, after a leisurely breakfast, we all depart for our favorite spots and throw out a few decoys as we wait for the sun to sneak over the Swan Range and burn off the mist lying low on the water. By midmorning we straggle back to the cabin for coffee. Some settle down for naps, others might head off to stroll in search of grouse, some might produce a fishing rod and spend a few hours trying to lure northern pike up from the depths. Nothing seems particularly urgent.

No, Goose Camp is not yet a retirement home for duck hunters. We do hunt. We shoot. When we wander in from the morning hunt, there are always some fresh ducks hanging on the back porch, and just maybe a goose.

And every year, we manage to generate a story or two about someone in the group. If all else fails, we can always count on Gimpy to add a new wrinkle to the whole deal. Perhaps he will forget his shotgun again, or his license. Or maybe he will lose his wallet, with the license in it, and blame it on the pack rat that lives in his basement.

It is clear to everybody that we aren't in it for the ducks anymore. Most of us have plenty of opportunity to spend time on other, more productive waterfowl areas throughout the season. But for now, for this one weekend, we are captives of tradition.

When we first started coming to Goose Camp, we were a carefree bunch, although, as is the way with youth, we didn't know how good we had it then. Most of us had lots of time in our lives to do the things we all liked to do and we had few responsibilities to complicate matters. Now there are families to consider, soccer games, music lessons, and PTA. And there are real careers to attend to, mortgages to pay off, and the endless minutiae of daily life to pull us in all directions.

Over the years there have been family tragedies, financial difficulties, career changes, and personal demons of all sorts for each of us to wrestle with. Our lives have taken different paths, yet somehow each year, the appointment at Goose Camp has been kept. For those two days each year the clock is turned back and we are kids again. It always ends too quickly of course. On Sunday afternoon the whole crew busily sweeps out the old cabin, boards up the windows for the winter, and leaves it standing there empty. We say our awkward goodbyes in the driveway before we head off in the direction of our real lives.

That's when the vague feeling of loneliness that creeps around the edges of autumn days gives way to a melancholy that renders the mountains and valleys almost painfully beautiful on the long drive home. ■

DRAFT WARMWATER FISHERIES PLAN AVAILABLE

Since February of 1996, Montana Fish, Wildlife & Parks (FWP) has been involved in developing a new, statewide warmwater fisheries management plan. This is an important initiative given the growing interest in warmwater fishing in Montana. The new plan is intended to provide management direction for the state's warmwater fisheries for the next 10 years.

One of the first steps in creating the new plan was forming a citizen's advisory group to provide angler input. This group, which includes representatives from all parts of the state, is composed of anglers from groups like BASS and Walleyes Unlimited as well as unaffiliated anglers.

With the assistance of the advisory group, FWP created and distributed an information package in March of 1996 to inform anglers of the new warmwater plan process and to obtain feedback on a number of issues. The package included a 30-page summary of the state's present warmwater fisheries, a description of current issues, and a questionnaire aimed at measuring interest in warmwater fishing and getting opinions on issues like special regulations and new fish introductions. About half of the 2,000 questionnaires were distributed to individuals requesting the package, and the other half to anglers randomly selected from FWP's fishing license database.

Results of the survey are being used to help formulate the first draft of the warmwater plan, which will be presented to the FWP Commission at its October meeting. If the plan receives tentative approval from the Commission, it will then be distributed to the public for a 30-day written comment period. Public meetings will also be held throughout the state to further present the plan and obtain additional comments.

Feedback from written comments and public meetings will help shape a second draft that will be presented to the Commission at its January 1997 meeting for final approval. If approved, the plan will set the stage for warmwater fisheries management well into the next century.

ROSS CAMPBELL

FWP is seeking anglers' comments on management of walleyes (above) as well as other warmwater species.

The new plan will provide priorities for warmwater management within each of FWP's seven administrative regions. Key waters within each region will be addressed in terms of needs ranging from facility development to special regulations. In some instances, such as new species introductions, the Montana Environmental Policy Act (MEPA) will guide the decision-making process, but the new plan will dictate which projects are proposed for MEPA analysis.

Fisheries with current management plans, such as Fort Peck Lake and Canyon Ferry Lake, will not be addressed in the plan. A complete list of waters with ongoing management plans and their respective timetables will be included in the appendix so readers will be aware of when the planning process will resume for each of these waters.

After the final warmwater plan is adopted, an advisory group will continue to meet periodically to help guide warmwater management over the next 10 years.

Anglers and other interested parties can obtain a copy of the draft management plan by contacting the nearest FWP regional office or the Fisheries Division, Montana Fish, Wildlife & Parks, 1420 E. Sixth Ave., Helena MT 59620-0701 (406/444-2449). Information can also be obtained on dates and locations of public meetings throughout the state. Providing written comments or attending public meetings will be the best way to participate in the planning process.

FWP, along with the citizen's advisory group, is dedicated to producing a plan that accurately reflects the interests of Montana's warmwater anglers, so if you enjoy fishing for warmwater fish, please involve yourself in the planning process this fall.—*Jim Satterfield, Bureau Chief, Fisheries Division*

FWP Professionals Honored

The Montana Chapter of The Wildlife Society honored two FWP employees at its 1996 annual meeting at Chico Hot Springs.

Region 3 wildlife biologist Tom Carlsen received the Biologist of the Year Award for his role over the last four years in putting ecosystem management principles to work in the Elkhorn Mountains. Carlsen, who lives in Townsend and serves as unit manager for Canyon Ferry Wildlife Management Area, was cited specifically for his work on the Crow Creek Environmental Assessment, the Elkhorn travel plan, and reintroduction of bighorn sheep into the Elkhorns.

Craig Jourdonnais, audio/visual specialist for FWP's Conservation Education Division, received the Bob Watts Communications Award in recognition of his skills in creating effective media presentations on complex issues like bison management and whirling disease, and in producing FWP's video magazine and outdoor reports. The award is given each year in memory of Lewistown wildlife biologist Bob Watts, who died in 1990.

Bridger Raptor Festival Set for October

Each autumn, birds of prey concentrate along the Bridger Mountains north of Bozeman during their southward migration. Between late August and early November, as many as 17 species can be seen. The area is perhaps best known for hosting the largest migration of golden eagles in North America.

On October 5 and 6, free workshops and field trips will be held at Bridger Bowl Ski Area to celebrate this annual birdwatching spectacle. For brochures, call 1-800-223-9609 or check http://www.montana.edu/~ousnd/raptor.html. Sponsors of the festival include the U.S. Forest Service, Bridger Bowl Ski Area, HawkWatch International, and Montana Fish, Wildlife & Parks.

Pheasants Forever Seeks New Members

Pheasants Forever, a nonprofit conservation organization founded in 1982 to stem the nationwide decline in pheasant populations, concentrates on improving habitat, educating the public about wildlife needs, and promoting land management practices that benefit farmers and wildlife alike.

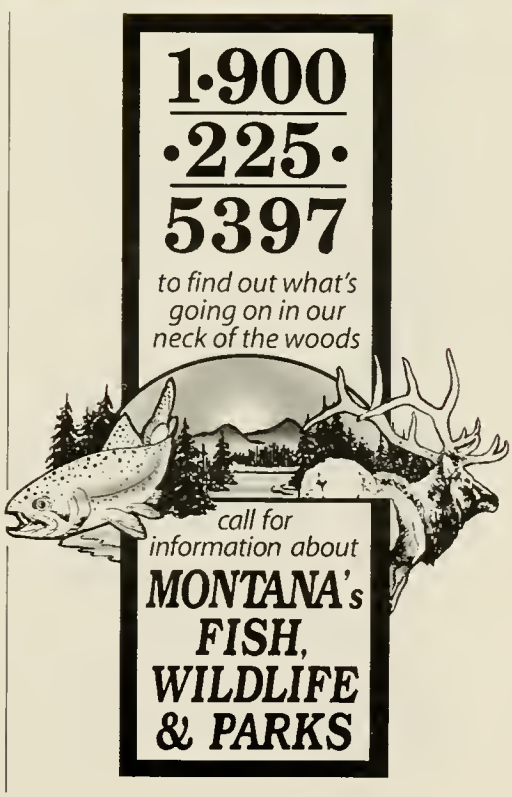
GARY KRAMER

Each Pheasants Forever chapter maintains total control of its habitat funds, providing an extra incentive for sportsmen and women to raise money through local fund-raising efforts. Chapter leaders, with help from resource professionals, establish habitat restoration programs customized to meet the needs of wildlife in their area. Typical programs include planting of nesting cover and food plots, establishment of shelterbelts for winter cover, wetland restoration, fencing projects, and land acquisitions.

Since 1982, Pheasants Forever has spent more than $19 million on habitat projects that encompass more than 800,000 acres. In addition, the organization played a pivotal role in reauthorization of the Conservation Reserve Program in the recently passed 1996 Farm Bill.

Montana now has a dozen Pheasants Forever chapters, five of which have fund-raising banquets set for this fall: Yellowstone Valley Chapter, Billings, Sept. 26; Five Valleys Chapter, Missoula, Sept. 28; Upper Missouri Chapter, Great Falls, Oct. 9; Central Montana Chapter, Lewistown, Oct. 10; North Central Chapter, Havre, Oct. 15; and Daniels County Chapter, Flaxville, Oct. 26.

Pheasants Forever is seeking people interested in joining an existing chapter or starting a new one. For information, call the national headquarters at (612) 773-2000.



DETAIL FROM "COMMON GROUND" BY LARRY ZABEL

"LANDSCAPE,"

a 28-minute video documentary, is the story of artist Larry Zabel's quest to create a new image of today's West.

With competing interests on public lands often locked in controversy, Zabel takes a refreshing look at the issue of grazing on our public lands.

Must there continue to be conflict, or is there more common ground than some might expect?

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MO Video Subscriptions Offered

For an annual price of $25, you'll receive three *Montana Outdoors* videos, one every fall, winter, and spring. Each video explores Montana's outdoor splendors. The 1996 fall edition includes segments on elk bugling, conservation easements, Dutch-oven cooking, and an aerial tour of the Bob Marshall Wilderness. To subscribe, send your check to: Video Production Unit; MT Fish, Wildlife & Parks; 930 W. Custer Ave.; Helena, MT 59620; (406) 444-2733.

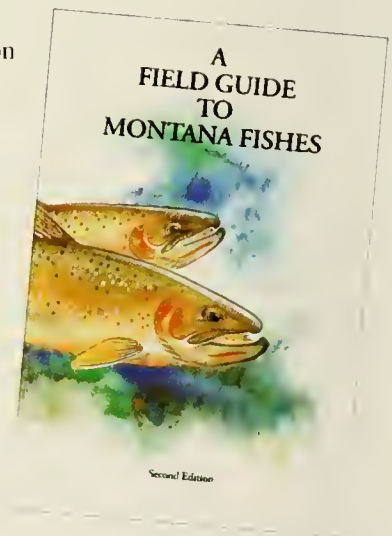
Outdoor Report Broadcast Schedule

FWP's weekly video news program, called the "Outdoor Report," airs on all Montana television stations during their evening newscasts. The broadcast schedule for these two-minute productions is as follows:

LOCATION/ STATION	DAY/ NEWSCAST TIME
Billings:	
KTVQ-TV (CBS)	Thursday/10:00 p.m.
KULR-TV (NBC)	Thursday/Friday 5:30 & 10:00 p.m.
Great Falls:	
KFBB-TV (ABC)	Thursday 5:30 p.m.
KRTV-TV (CBS)	Thursday 5:30 p.m. Sun/10:00 p.m.
Missoula/Kalispell:	
KECI-TV (NBC)	Wednesday/6:00 & 10:00 p.m.
KPAX-TV (CBS)	Thursday/10:00 p.m.
Butte-Bozeman:	
KXLF-TV (CBS)	Friday/10:00 p.m.
Helena:	
KTVH-TV (NBC)	Thursday/5:30 & 10:00 p.m.
Miles City:	
KYUS-TV (FOX)	Friday/5:00 & 10:00 p.m.

Montana Fish Guide Again Available

The second edition of *A Field Guide to Montana Fishes* is now off the press. Like the user-friendly earlier edition, it employs a simple picture key to fish families and contains a minimum of scientific jargon.



The book features a black-and-white illustration with distinguishing characteristics labeled for each species, along with a state distribution map and habitat description. Look-alike fishes are grouped for easy comparison. Color paintings of Montana's 30 game and sport fishes are included to aid in identification.

The guide, which has a waterproof cover and fits easily in a gear bag or tackle box, is a valuable reference for biologists, students, and anglers.

The authors, retired Montana Fish, Wildlife & Parks fisheries biologists George Holton and Howard Johnson, served as volunteers in completing this revision for the department. The color paintings were done by Glenn West and the black-and-white illustrations by Harold (Rich) Stevenson.

A Field Guide to Montana Fishes is available from local booksellers or from the Montana State Parks and Wildlife Interpretive Association, P.O. Box 9211, Helena, MT 59604. Price from the association is $12.95 plus $2.50 shipping.

BOOKSHELF

AUTUMN PASSAGES: A DUCKS UNLIMITED TREASURY OF WATERFOWLING CLASSICS, Willow Creek Press, P.O. Box 147, Minocqua, WI 54548 (1-800-850-9453); 1995, 320 pages, hard cover, $25.00 plus $4.00 postage and handling.

This collection of duck hunting stories compiled by the editors of *Ducks Unlimited* magazine has been gathered from numerous published sources, many no longer in print. They vary in time from tales of battery box shooting in the 1800s to modern-day gunning in flooded timber and saltwater ponds. Stories by waterfowling legends like Gordon MacQuarrie, Nash Buckingham, and Jimmy Robinson are included, along with yarns by lesser known but equally entertaining baymen, guides, and ordinary hunters. Contemporary writers like Gene Hill, Ron Rau, and Chuck Petrie are represented as well. Illustrations by the late Francis Lee Jacques, one of the first artists selected to design the annual federal duck stamp, add to the book's nostalgic feel.

GLACIER & WATERTON, LAND OF HANGING VALLEYS, by Paul Schullery, photography by Jeff Garton, Tehabi Books, 13070 Via Grimaldi, Del Mar, CA 92014-3798; 1996, 132 pages, soft cover ($25.00) or hard cover ($37.50).

As author Paul Schullery says of the mountains and high-altitude lakes that make Waterton/Glacier International Peace Park a geologic and ecologic wonder, "Peaks rise abruptly on both sides, all raw rock, lingering ice...this landscape is always grabbing you and spinning you around, demanding that you absorb yet another fantasy vista and consider yet another beckoning pass astride some distant ridge."

Schullery, who has written numerous books on natural history, relies on his personal experiences as a park ranger and his knowledge of the region's geology, plants, and wildlife to bring the Waterton/Glacier landscape to life. The text is enhanced by more than 100 images—photographs, maps, and illustrations, including four informative foldouts containing details on topography, geology, glaciers, and life zones.

ELK: BEHAVIOR, ECOLOGY, CONSERVATION, text by Erwin A. Bauer and photography by Erwin and Peggy Bauer, Voyageur Press, P.O. Box 338, Stillwater, MN 55082 (1-800-888-9653); 1996, 160 pages, hard cover, $35.00 plus $2.95 shipping and handling.

Erwin and Peggy Bauer, award-winning photographers from Livingston, Montana, visited some of the most rugged and beautiful regions of North America during all seasons to obtain the stunning color photos that illustrate this large-format book. But *Elk* is more than just a beautiful photo book; with information on elk physical characteristics, antlers, diet, habitat, behavior, instincts, evolution, distribution, and conservation issues, it is a complete introduction to one of North America's premier game animals.

P.D. SKAAR'S MONTANA BIRD DISTRIBUTION, FIFTH EDITION, Montana Audubon Council, P.O. Box 595, Helena, MT 59624; 1996, 130 pages, soft cover, $8.00 plus $2.00 shipping.

This useful reference, first published by P.D. Skaar in 1975 and updated this year by Montana Audubon, the Montana Natural Heritage Program, and Montana Fish, Wildlife & Parks, contains detailed information on where birds are found in Montana. It lists every species observed in the state, and presents maps for each bird that show breeding, migration, and wintering areas.

Seven birds are new to this edition: Arctic tern, yellow-bellied sapsucker, yellow-bellied flycatcher, Bewick's wren, golden-winged warbler, prothonotary warbler, and painted redstart.

In addition to distribution maps, the book contains information on recent taxonomic changes; the Montana bird distribution database; threatened, endangered, and sensitive species; and "neotropical migrants," the birds most likely to be threatened by habitat destruction in Central America.

WATCHING WILDLIFE, by Mark Damian Duda, Falcon Press, P.O. Box 1718, Helena, MT 59624 (1-800-582-2665); 1995, 117 pages, soft cover, $9.95 plus $3.00 shipping and handling.

This book, written to assist people in learning how to watch wildlife without disturbing animals or harming habitats, offers all the latest information for getting prime views of everything from bald eagles to deer and elk to whales. It contains information on where and when to look for wildlife from coast to coast, tips on selecting the right pair of binoculars, basic instruction on wildlife photography, and clues to identification of a wide range of species.

Duda, who is a noted conservation educator and an authority on wildlife viewing, finishes the book with a section on the importance of citizen action and involvement with wildlife as an essential part of conservation.

GLACIER NATIONAL PARK: A NATURAL HISTORY GUIDE, by David Rockwell, Houghton Mifflin Company, 215 Park Avenue South, New York, New York 10003; 1995, 278 pages, soft cover, $16.95.

Geology, plant communities, wildlife, lakes and streams, and human history are all covered in this guide to one of the country's largest and most spectacular national parks. Although Glacier attracts more than two million visitors a year, it is still largely wilderness. Author David Rockwell describes the forces that sculpted this wild place and sketches the lives of the diverse plants and animals that inhabit it, from the trout to the grizzly bear. In addition to the natural history narrative, the book contains maps, information on park activities and facilities, checklists of plants and animals, and numerous black-and-white and color photos.

HARD CHOICES ON THE MADISON

I thoroughly enjoyed your July/August piece on the Madison River where I practically grew up. Bud Lilly's comments, as always, were very cogent. We are old friends, Bud and I.

We now have an idea how the Indians felt as the frontier passed them by as inevitably as time itself. Yet, unlike the Lakota and the Cheyenne, et al., we retain the ability to preserve what is dear to us—we fly-fisherman, that is. There are, however, tough decisions to be made.

Perhaps foremost among these is a recognition that overuse of our fisheries is as much of a pollutant as pesticide in its own way. I remain unconvinced, for example, that crowding of blue-ribbon waters like the Madison has not contributed to the whirling disease epidemic. Fishermen can—and do—transmit the parasite spores. In our multitudes, we are all potential "Typhoid Marys."

FWP friends of mine are predictably defensive as are outfitters, tackle shop owners, manufacturers of fishing gear, even environmental groups like Trout Unlimited whose worthwhile works rely on the contributions of growing memberships. So the environment of our pastime is rapidly being transformed into a combination golf-course/ski slope. And we are addicted to the caddy or instructor fees, if you will.

What do we earn? Something around $150 million-per-annum from tourist-fishermen? That represents a hefty income for us all, FWP included. Ennis and Livingston, according to your own economic impact studies, are already largely dependant on the fly-fishing market. Why bite the hand that feeds us by reducing demand?

Hard choices here, indeed. But somebody had best start making them. No river can sustain 100,000-plus fishermen-days and continue to provide what Bud Lilly so correctly identifies as "a quality experience." The pressure must be better distributed or lessened—and soon.

After a half-century of fly-fishing our resource, I'll gladly shoulder outrage. How about *Montana Outdoors*?—*Nathan M. Adams, Alexandria, Virginia*

DON'T SELL OUT CHEAP

"I've got plenty of nothin' and nothin' is plenty for me." Montana has plenty of "empty" and "empty" is a great place to be.

Our greatest treasure...space...open space...prairie space...hill space...mountain space...sky space...space for the wind to howl and whirl, for tumbleweed to roll, for wild horse and grizzly and bighorn and mountain goat to magically appear and disappear.

Space for tiny antelope to grow up stretching legs on 50-mile-per-hour passages through "empty," swirling like snowbirds or autumn blackbird clans, crossing the prairie with the winds.

Space for buffalo memories to exist alongside Angus and Charolais and cattalo and Hereford. Space for mule deer, whitetail, for turkey. Space for short tail and sage hen, pounding out the beat of a heart gone wild with springtime. Space for eagle and falcon to float overhead, kites on a tether, breaking loose, rocket accelerating to earth, struggling up, bearing a burden dripping water and feathers, and life, into the sky.

Space for living, space for death, space more valuable, more worshipped, more maligned, more despoiled, every day.

That empty, that alkalied, dried-up flat, drifting away on the forever blowing westerlies, dotted with tiny dust tornado, split by gully, gulch, and summertime, and moonscape winter, it is a place of immensity, desolation, and surprise, all Montana.

The hundred-mile-plus expanse seen from a mountaintop earned by lung burning, heart thumping, "I'll never make it" effort, the disorienting, gut wrenching look down mountain cliff and rock slide, these views of empty are truly Montana.

To quote from Ross Toole's *Montana: An Uncommon Land*, "What we are not is often more compelling than what we are. The fact of our emptiness is in itself immensely significant."

"Empty" is the true Montana treasure. Don't sell out cheap.—*Joe Walters, Billings*

DEER AND ELK DOING FINE

Your May/June issue had a nice letter from a lady living in Cortez, Colorado. She lamented the fact "...most of our wildlife in Colorado has been hunted—killed off."

The heck; our deer herds now stand at between a half million and 600,000; elk herds number over 220,000. Any decrease in either of these herds revolves around three factors: loss of habitat; severe winters, and very important—the dramatic increase in predators, especially coyotes. Overhunting is the least of our big-game herd worries.—*Neil Cantwell, Grand Junction, Colorado*

IN LOVE WITH MONTANA

When I was a little girl my sister and I always pretended we lived on a ranch somewhere in Wyoming and/or Montana, but it was mostly Montana. I have always wanted to visit your state. In September 1995, my husband and I made our first trip out West. All of the photography that I had seen could not do justice to seeing the beauty and magnificence of those mountains and that sky in person. We both fell in love with Montana's Rockies. I yearn to return for a longer stay.

I just received my first issue of *Montana Outdoors*. Thank you for publishing this magazine; if I can never go back I can at least have Montana to dream of and explore through its pages.—*Debbie Cooper, Clearville, Pennsylvania*

CONTRIBUTORS

All hunters know that elk migrate from their summer range high in the mountains to lower elevations as fall progresses. In fact, many hunters wait for early winter storms to push elk down to places where it's easier to hunt them. But, says Bozeman-based writer **SAM CURTIS**, "We'd more fully appreciate the complex world of Montana's premier game animal if we'd hunt a herd of migratory elk from its first loose scatterings on alpine summer range right down to its final concentrated knot along open foothills where they winter." In "A Massing of Elk" (p. 2) he traces this on-again, off-again annual journey and explains how it is influenced by weather and hunting pressure.

When **JOHN VORE** thinks of his favorite mountain haunts, a number of images come to mind: alpine lakes, snow fields, grizzly bears, bighorn rams...and hoary marmots, the subject of this issue's "Watchable Wildlife" profile. Larger than the more widely distributed yellow-bellied marmot, the hoary marmot lives near timberline in western Montana mountain ranges. For an in-depth look at this 15-pound member of the squirrel family, turn to "Living in the Crown" on page 8. Vore is a wildlife biologist headquartered in FWP's Region 1 (Kalispell) office.

Vore

According to **JEFF HERBERT** and **FRED JOHNSON**, duck hunting regulations grew increasingly complex in the late 1980s and early 1990s, frustrating both hunters and waterfowl managers. As a result, in 1992 biologists began working on a new technique to streamline the season-setting process. Now in its second year, Adaptive Harvest Management (p. 14) represents a milestone in conservation of our waterfowl resource. Herbert is FWP's statewide waterfowl coordinator in Helena, and Johnson is with the U.S. Fish and Wildlife Service's Office of Migratory Bird Management in Laurel, Maryland.

Mule deer numbers in some parts of Montana are down, and hunters are seeing fewer trophy bucks. These problems, says **WILLIAM PHIPPEN**, were the focus of FWP-sponsored deer "summits" held across the state this summer to share information about mule deer populations, explain management options, and gather input from hunters. In "The Mule Deer Dilemma" (p. 19), Phippen summarizes the steps being taken to address the mule deer decline and explains the options available to bolster buck numbers. Phippen is an information officer stationed at FWP headquarters in Helena.

Carty

According to **DAVE CARTY**, hunting "Montana's River Roosters" (p. 23) is a good news-bad news situation. The good thing about hunting the river bottoms is that you usually know where the birds are, an advantage not always possible in miles of look-alike CRP fields. The down side is the somewhat unfriendly nature of the cover: wild rose bushes that scratch and grab, beaver-sharpened willow stubs that poke holes in hip boots or waders, and cattails that encourage leg cramps. But, says Carty, with waders, a good dog, and the right tactics, hunters can usually emerge from the river-bottom jungles with a rooster or two. Carty, a free-lance writer and veteran pheasant hunter, resides in Bozeman.

Tollefson

"Swan Lake," admits **GREG TOLLEFSON** in his "Perspectives" piece beginning on page 28, "is not a place you go to satisfy waterfowl blood lust." Yet, a dedicated group of hunters has gathered there every opening weekend of duck season for the past 25 years. Known affectionately as "Goose Camp" (for its consistent and notable lack of geese), the rendezvous has seen some changes over a quarter of a century: waistlines have expanded and hair has thinned, canine heroes have come and gone, and an occasional new truck has shown up in the driveway. But the stories, the camaraderie, and the duck hunting haven't changed over the years. Tollefson is a Missoula-based writer who serves as executive director of the Five Valleys Land Trust.

MO thanks the following photographers for their contributions to this issue: **ERWIN** and **PEGGY BAUER**, Livingston; **DENVER BRYAN**, **DAVE CARTY**, and **DUSAN SMETANA**, Bozeman; **ROSS CAMPBELL** and **MIKE LOGAN**, Helena; **TIM CHRISTIE**, Coeur d'Alene, ID; **VINCE FISCHER**, Butte; **MICHAEL H. FRANCIS**, Billings; **JOHN R. FORD**, Land O' Lakes, WI; **GREG GERSBACH**, Danbury, WI; **BUD GRIFFITH**, Gallatin Gateway; **JOHN W. HERBST**, Keystone, SD; **DONALD M. JONES**, Troy; **GARY KRAMER**, Willows, CA; **BILL MARCHEL**, Fort Ripley, MN; **BILL MCRAE**, Fairfield; **CONRAD ROWE**, Seeley Lake; and **TOM J. ULRICH**, West Glacier. Thanks also to **MIKE GURNETT**, who works for the department in Helena.

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